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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/171,236	07/13/1999	NORIO HAGA		7804

7590 03/12/2003

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EXAMINER

GOOD JOHNSON, MOTILEWA

ART UNIT PAPER NUMBER

2672

DATE MAILED: 03/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/171,236

Applicant(s)

HAGA ET AL.

Examiner

Motilewa A. Good-Johnson

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-22,24 and 26-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-22,24 and 26-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

1. This action is responsive to communications: application, filed on 07/13/1999; IDS, paper #4, filed on 02/04/1999; IDS, paper #7, filed on 11/01/1999; IDS, paper #10, filed on 09/06/2000; Amendment A, filed on 06/05/2001; IDS, paper # 18, filed on 06/13/2001; Amendment B, filed on 02/08/2002; Amendment C, filed on 07/22/2002; Amendment D, filed on 12/26/2002.

This action is made final.

2. Claims 17-22, 24 and 26-35 are pending in this application. Claims 17, 27, 28 and 35 have been amended. Claim 23 has been canceled.
3. The present title of the application is "Device and Method for Image Processing" (as originally filed).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Nishiumi et al., U.S. Patent Number 5,973,704, "Three-Dimensional Image Processing Apparatus", class 345/475.

As per independent claim 20, an image processing device . . . characterized by comprising: determination means for determining whether or not said objects are in a specific area . . . and camera angle adjusting means for adjusting the angle of said virtual camera based on the results . . . Nishiumi discloses determining whether or not a object exists between the camera and an operable object position and if so altering the camera perspective, col. 1, lines 5-12, col. 12, lines 42-67 and figure 20.

With respect to dependent claim 21, . . . camera angle adjusting means adjusts the angle of said virtual camera based on the results . . . Nishiumi discloses said camera position changing based upon said detection, figure 20.

With respect to dependent claim 22, . . . camera adjusting means adjusts the angle of said virtual camera in at least one of either the lateral and vertical directions . . . Nishiumi discloses in col. 12, lines 55-67.

6. Claims 24 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyamoto et al., U.S. Patent Number 6,454,652, class 463/31.

As per independent claim 24, an image processing device . . . comprises: angle computing means for computing the angle between an eye direction vector showing the direction in which said virtual camera is facing an a normal line vector . . . and polygon tilting means for changing the coordinate values of the vertices of said polygons . . . ; wherein the shape of an object formed by the polygons is modified . . . Miyamoto discloses determining directionality of a polygon by the normal vector and eye point, col. 33, lines 48-67, and further discloses a tilt calculation for Mario, col. 44, lines 46-67.

As per independent claim 35, Miyamoto discloses polygons forming planes in a game and camera modes for causing the camera angle to change to enable for a more distant view, col. 34, lines 30-67, and further discloses extreme close-up.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 17-19, 27-28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Han et al., "Character Image Restoration Based on Characteristic Points", IEEE.

As per independent claim 17, "an image processing method . . . characterized by comprising: polygons forming lines situated along a reference plane . . . polygons have a predetermined, fixed relationship to one another; determination means for determining

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the positional relationship . . . and polygon tilting means for tilting said polygons . . . ; wherein said polygon tilting means only tilts said polygons forming lines are at least a predetermined distance away . . . Han et al. discloses improving images, polygons, that are distorted by vision angles and distance by using distortion transformations, such as scaling, rotation, translation and tilting, to retrieve the image. Han et al. further discloses investigating the relationship between the original image and the distorted image for characteristic points. However, it is noted that Han et al. fails to disclose a virtual camera. It would have been obvious to one of ordinary skill in the art at the time of the invention that the visual angle disclosed in Han for viewing images, would constitute a virtual camera, for viewing images.

With respect to dependent claim 18, “. . . reference plane is the ground, and said polygons are polygons forming lines situated on said ground.” Han et al. discloses tilting as a projection of the original plane object or image onto a tilted plane, the disclosed projection of the original plane object corresponds to the ground plane and the image disclosed in figure 2B is representative of a polygon formed by lines.

With respect to dependent claim 19, “. . . polygons are quadrilateral, and said polygon tilting means modifies the coordinate values of the vertices on one of the sides of mutually facing sides . . . Han et al. discloses restoring a tilted image plane having a coordinate plane scaled, rotated or translated from the original plane coordinate.

As per independent claim 27, it is rejected based upon similar rational as above independent claim 17.

As per independent claim 28, it is rejected based upon similar rational as above independent claim 17.

As per independent claim 31, it is rejected based upon similar rational as above independent claim 17.

9. Claims 29-30 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Han et al. as applied to claim 28 and 31 above, and further in view of Miyamoto.

With respect to dependent claim 29, "a game machine . . . for executing a game by situating objects in said virtual three-dimensional space and by controlling objects . . . Miyamoto discloses said game machine, col. 1, lines 50-67. However, it is noted that Han fails to disclose a game machine for situating objects. Han discloses transformations of images distorted by viewing angles. It would have been obvious to one of ordinary skill in the art at the time of the invention of Han et al., to include all utilizations of images and characters, such as in game machines, and other apparatus in which images or objects are visually obscured.

With respect to dependent claim 30, ". . . game is a game in which objects are situated in a game field formed on a reference plane and said polygons are polygons are polygons forming lines . . . Han discloses transformations of images distorted by viewing angles. Miyamoto discloses in figure 20D a polygon forming lines. However, it is noted that Han fails to disclose a game machine for situating objects. It would have

been obvious to one of ordinary skill in the art at the time of the invention of Han et al., to include all utilizations of images and characters, such as in game machines, and other apparatus in which images or objects are visually obscured.

With respect to dependent claim 32, “. . . polygons are polygons that show lines.” Examiner takes official notice that a polygon is defined as a closed plane figure bounded by straight lines, thus making it inherent that lines would be shown, see Miyamoto figure 20D.

With respect to dependent claim 33, situating objects in said virtual three-dimensional space and by controlling said objects . . . Miyamoto discloses a control button, col. 34, line 45. However, it is noted that Han fails to disclose controlling objects. It would have been obvious to one of ordinary skill in the art at the time of the invention of Han et al., to include control of objects in game machines in that they utilize images and characters.

With respect to dependent claim 34, “. . . polygons are polygons forming lines described on said plane.” Examiner takes official notice that a polygon is defined as a closed plane figure bounded by straight lines.

Response to Arguments

10. Applicant's arguments, see Amendment D, filed 12/26/2002, with respect to the rejection(s) of claim(s) 17-22, 24, 26-35 under Miyamoto, Han, and Nishiumi have been fully considered and are not persuasive. However, upon further consideration, a new ground(s) of rejection is made in view of Nishiumi, Miyamoto and Han.

Applicant argues that Nishiumi fails to teach determining whether or not objects are in a specific area and camera angle adjusting means for adjusting the angle.

Applicant states that Nishiumi teaches determining means for determining whether an obstacle is located between the object and the camera. It is inherent that if Nishiumi teaches determining means for an obstacle, i.e. an object, and the camera, Nishiumi is determining based upon the obstacle's position in a certain area.

Applicant argues that Miyamoto fails to teach angle computing means for computing the angle between an eye direction and a camera. Applicant states that Miyamoto teaches adjusting the angle of the upper body of a character in the game. It is inherent that is Miyamoto adjusts the angle of the upper body and discloses improving camera perspective or point of view and character control features for improved visibility. Applicant further argues that Miyamoto fails to disclose polygon tilting means. Miyamoto discloses calculating tilt calculations for the character Mario, which is composed of polygons, thus proving polygon tilting means.

Applicant argues that Miyamoto fails to disclose polygons forming lines. It is inherent that polygons are composed of lines, thus providing lines for reference. Miyamoto discloses character control features and improving the point of view and perspective viewpoint for viewing the three-dimensional world.

Applicant argues that Han fails to disclose tilting of the polygon when the line polygons are at least a predetermined distance away from the camera. Han discloses transformation characteristics for characters that have been distorted by vision angles and distance, page 1060, section I.

Conclusion

11. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Motilewa A. Good-Johnson whose telephone number is (703) 305-3939. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Motilewa A. Good-Johnson
Examiner
Art Unit 2672

mgj
March 6, 2003

A handwritten signature in black ink, appearing to read 'MRZAVI', with a long horizontal line extending to the right.

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600